Tourism, Economic Growth and Current Account Deficit in Pakistan: Evidence from Co-integration and Causal Analysis

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Abstract

Tourism has become the world’s most vital industry and dynamic sector with its direct and indirect effects on economy. Pakistan has a great potential for the tourism due to its diverse topography culture and traditions. In this study, we examine the cointegration and causal relations among the tourism, economic growth and current account deficit in Pakistan for the period of 1972 to 2007. Using Johansen cointegration technique and ECM, this paper finds that there is a long run relationship between number of tourists and GDP growth through the channel of reduction in current account deficit. The causal relationship between number of tourists, CAD and GDP growth is determined separately using Granger Causality test. This also confirms the hypothesis that there is a unidirectional causal relationship from CAD to GDP, Tourists to GDP and Tourists to CAD. In the end, the study incorporates some suggestions for improving the tourism industry in Pakistan focusing on tourism led growth.

Keywords: Tourism, Economic Growth, Current Account Deficit, Granger Causality, Cointegration.

JEL Classification Codes: L83, O40, F32.
I. Introduction
Tourism, in this global era has found its potential as an engine of growth for a country. Tourism is considered as a vital source of reducing current account deficit through foreign exchange earnings and growth for a country. It has gained currency in the international relation as a basis for improving political, cultural and economic ties among the nations. However, its economic impacts supercede all its bearings on other fields. Tourism ensures inflow of foreign exchange that can be used to import capital goods and hence capital formation in the country.

It has been found in various studies that tourism and economic growth has profound link. It improves country’s balance of payments accounts by reducing current account deficit. Most of the LDCs like Pakistan have low competitiveness in their exports in international market. Their current account witnesses a persistent deficit due to meager exports and high inelastic imports (Pakistan Economic Survey, Various Issues). However, this can be redressed if a greater emphasis is put by these countries on the service sector especially tourism.

Since long, tourism has become an important target for most of the countries especially South countries. According to UNWTO World Tourism Barometer (2009), “international tourist arrivals totaled 924 million worldwide at the end of 2008 with an increase of 1.8% over 2007. It highlighted that arrivals had slowed drastically in 2008, under the influence of an extremely volatile and unfavorable global economy. According to the Barometer, after 5% increase in the first half of 2008, growth in international tourist arrivals moved into negative territory in the second half of the year with -1%. The UNWTO forecasts that international arrivals will be flat at best or a few percent down at worst by the end of 2009, as there are no signs that this downward trend will be reversed in the near future”.

Pakistan has great attractions in the form of scenic beauty such as sun, ocean, mountains, flora and fauna, lakes and in particular the hospitality of its people that may compel the tourists to visit Pakistan. They have the opportunities to escape from the fretfulness and monotony of daily life and can relax in an ideal climate and perfect conditions. The rich cultural heritage of Pakistan comprise of Mohenjo-Daro cradle of ancient Indus Valley and Gandhara Civilization. The three great mountain ranges, the Himalayas, the Hindukush and Karakoram meet in this land. It is a blend of old and modern civilizations. The Nature has bestowed Pakistan a diverse topography, demography, culture and traditions paving the way for investment in the tourism sector giving the strength to boost the economy.

So, this potential should be exploited in a rational way to have some valuable economic benefits. By the year 2007, Pakistan witnessed the tremendous growth in the number of tourists. It hosted 839500 tourists by various channels and the total receipts from tourism were $276.1(Pakistan Economic Survey, Various Issues).

The tourism and growth nexus can be justified through various channels. How it is admitted fact on the all the hands that increase in tourism leads to balance of payments improvement through reduction in current account deficit and increase GDP growth. Various studies validate the long run relationship between tourism and growth [Brida.J.G et al. (2009)].

This paper is an attempt to investigate whether tourism contributes to economic growth of Pakistan. The empirical relationship between number of tourists, current account deficit and GDP is tested for the period 1972 to 2007 using cointegration technique and error correction mechanism. The variable current account deficit is selected because tourists receipts has cogent link with current account deficit. Any increase in tourist arrival can cause current account deficit to reduce significantly. The remainder of the paper is organized as follows: Section II includes the review of various studies exhibiting the tourism growth relationship. In Section III and IV, data description and methodology have been explained respectively. Section V covers the estimation results and discussion and last section provides the conclusion and policy implications of the analysis.
II. Review of Various Studies

Various studies both theoretical and empirical have investigated the tourism industry and its impacts on economy. These studies demonstrate different results. Some of reviewed studies are as follows:

Zortuk (2009) find the economic impact of tourism on Turkey’s economy by applying cointegration technique using quarterly data over the period 1990 to 2008. The study shows the long-run equilibrium relationship between GDP and tourist arrivals. There is a unidirectional causality between variables, from tourist arrivals to economic growth.

Lau et al. (2008) investigate the relationship between tourist arrivals and economic growth in Sarawak. The study shows the long-run relationship between tourist arrivals and economic growth by using the Granger Causality test and indicates that the continuous tourism development leads to economic growth.

Lee and Chang (2008) apply panel cointegration technique to examine the long-run and causal relationships between tourism and economic growth for OECD and non-OECD countries using the data for the period 1990–2002. The authors have confirmed a co-integrated relationship between GDP and tourism for the heterogeneous country. The study shows that tourism has a significant impact on GDP in non-OECD countries than in OECD countries. The panel causality test exhibits that there is unidirectional causality relationship between tourism and economic growth in OECD countries and bidirectional relationship in non-OECD countries in the long run.

Brida et al. (2008) study the relationship among tourism expenditures, real exchange rate and economic growth in Mexico. The authors have applied cointegration and causality tests to verify the tourism led growth hypothesis. The study shows that expenditures have more than proportional effect on growth.

Fayissa et al. (2007) investigate the impact of tourism on economic growth and development in Africa. The authors have explored the probable contribution of tourism on economic growth within the usual neoclassical structure using panel data of 42 African countries for the years 1995 to 2004. The study shows that the tourism industry’s receipts have a significant impact both on current level of GDP and economic growth of African countries. The authors suggest that African economies can increase their short-run economic growth by supporting their tourism industries.

Rafiq and Shafiqullah (2007) examine the valuation of tourism’s benefits in Chitral Valley. The study employs Zonal Travel Cost Method (ZTCM). They use the double log functional form for estimating the value of the recreational visits. The findings of the study help the local government for imposition of an optimal entry fee and efficient resource allocation.

Khalil et al. (2007) investigate the role of tourism in short-run economic growth in Pakistan economy. The study uses the error-correction model and shows the strong relationship among tourism, receipts and economic expansion.

Vanegas et al. (2007) explore the causal relation among the tourism expansion, economic growth and poverty for Nicaragua. The authors have applied co-integration and causality tests. The findings of the study show that tourism has a considerable positive influence on Nicaragua’s economic expansion. The study suggests tourism-based economy for economic growth and alleviating poverty.

Jiménez and Ortuño (2006) present the role of international tourism and economic development in Span through industrialization process. The study measures the role of tourism receipts in the Spanish economy for the period 1960-2002. They have used causality tests and prove that there is a long-run relationship between the foreign currency receipts from tourism and imports of manufactured goods.

Gunduz and Hatemi (2005) probe that tourism-led growth hypothesis valid for Turkey or not using leveraged bootstrap causality tests between tourism and economic growth. The results of the study confirm the tourism-led growth hypothesis empirically.

Chi-Ok Oh (2005) presents the contribution of tourism development to economic growth in the Korean Economy. The author has not found evidence of long term equilibrium between tourism receipts and economic growth. The study shows Granger unilateral causation showing that GDP Granger causes tourism.
Archer Brian (1995) compares the results of three separate input-output studies to measure the importance of international tourism for the economy of Bermuda as compared with other sectors. International business and finance have been generating foreign currency since the early 90s in Bermuda. The study shows that employment depends principally on tourism in Bermuda.

In nutshell, assorted studies have used various techniques to find a relationship between tourism and macro economic variables. Thus, it is admitted fact on the all the hands that there is a long run relationship between tourism and economic performance of a country.

III. Data Description

i). Definitions of the Variables

Foreign Tourists
According to the United Nation World Tourism Organization (2009), the definition of foreign tourist for Pakistan is prescribed as: “The term ‘foreign tourist’ is used to describe a person irrespective of his/her nationality, race, age, sex, language or religion, etc; who visited Pakistan for any reason other than seeking gainful employment, and whose duration of stay was for 24 hours or more but not more than one consecutive year. All Overseas Pakistanis travelling on foreign passports whose usual place of residence is outside the country, and who visited Pakistan during the period under report, fell within the purview of this definition. Excursionists and transit passengers whose stay was less than 24 hours are excluded. Every visit or entry of a tourist to the country meeting the above definition, have been counted as arrival”.

Tourism
According to the United Nation World Tourism Organization (2009), Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes.

Current Account
Current account determines the national income, output and employment. The current account of a country consists of all the transactions relating to trade in:

- Goods (wheat, rice, machines, etc.)
- Services (travel, tourism, insurance, banking, education, health, delegations etc.)
- Unilateral Transfers (donations, pensions, grants, gifts, remittances etc.)

In the Current Account, exports and imports of goods is the most important item. In this account, the exports of goods and services and transfer receipts are entered as Credits because they represent receipts from foreigners. On the other hand, the imports of goods and services and transfer payments to foreigners are entered as Debits because they represent payments to foreigners. Current account deficit means if receipt side of the Current account is less than its payment side, the Current account is in deficit or unfavorable.

Economic Growth Rate
Economic development and economic growth are the core issues of economic literature. Generally, both terms (economic development and economic growth) are used in expressing the idea of economic progress. But the economists draw distinction between the two terms.

“Economic growth is a steady process by which productive capacity of the economy increased over time to bring about rising level of national output and income”[Todaro (2006)].
ii) Sources of the Data
The data used for this study are taken from economic survey of the ministry of finance (various issues). Some information has been taken from fifty years statistics for Pakistan published by the Federal Bureau of Statistics.

iii) Descriptive Statistics
Descriptive statistics depicts the basic features of the data. They represent quantitative descriptions in a manageable form and provide simple summaries about the data. It differs from inferential statistics. Descriptive statistics describes what is or what the data shows while inferential statistics is used to reach conclusions that extend beyond the immediate data alone.

Table 1: Results of Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>CAD</th>
<th>TOURISTS</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>51946.3084</td>
<td>410588.7</td>
<td>69.74694</td>
</tr>
<tr>
<td>Median</td>
<td>27727.20</td>
<td>415613.5</td>
<td>66.50000</td>
</tr>
<tr>
<td>Maximum</td>
<td>333827.1</td>
<td>897589.0</td>
<td>144.4397</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.000000</td>
<td>110963.0</td>
<td>23.65000</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>66817.77</td>
<td>178890.3</td>
<td>34.42162</td>
</tr>
<tr>
<td>Skewness</td>
<td>2.469086</td>
<td>0.868466</td>
<td>0.411487</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>10.17960</td>
<td>4.059424</td>
<td>2.148838</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>113.8982</td>
<td>6.208964</td>
<td>2.102643</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000000</td>
<td>0.044848</td>
<td>0.349476</td>
</tr>
</tbody>
</table>

Table 1 shows the results of descriptive statistics of the data. The mean of variables CAD, Tourists and GDP is 51946.30, 410588.7 and 69.75 respectively. The standard deviation, a measure of dispersion or spread in the series, of variables CAD, Tourists and GDP is 66817.77, 178890.3 and 34.42 respectively. The skewness of a symmetric distribution is zero. The values of skewness indicate that the distribution is positively skewed i.e. mean is greater than median and median is greater than mode. Comparing the values of skewness of different variables under consideration, it is obvious that the skewness of variable CAD is highly positively skewed as compared to values of Tourists and GDP. So, the data of Tourists and GDP is nearly normally distributed under the period of study. The Kurtosis of normal distributions is 3 whereas the Kurtosis of all variables is greater than 3 which show leptokurtic distribution.

IV. Methodology
In order to investigate the empirical relationship among tourism, growth and current account deficit, the annual data for the period from 1972 to 2007 are used. The assertion here is tourism growth is one of the prime movers of the economic growth. Hence to postulate here is that tourism growth has a positive correlation with economic growth through the reduction in current account deficit of a country. As current account is greatly influenced if the number of tourists increases so it performs as signal indicating that economic condition of a country is improving. Number of the tourists (Tour), Current account deficit (CAD) and growth (GDP) is shown in a functional form as follows:

\[
\text{Real GDP growth rate} = f(\text{Tour, CAD})
\]

Real GDP growth rate is used as proxy for economic growth. Tour represents the number of tourist’s arrival in Pakistan in different years and it is used as a proxy for tourism expansion. CAD is a current account deficit measured in Pakistani rupees. It is used as an indicator of improving balance of payment condition of a country. As if GDP growth was taken to show the economic expansion it would
be misleading because GDP can grow due to some other factors during these years. So while including CAD we have developed a cause and effect relation between GDP growth and tourism through CAD.

In order to verify the long run relation between tourism and growth a test of co integration is used. The methodology of co integration involves two steps. First to check the stationarity of the data if the variables are stationary (that is having constant means and variance over time) then OLS technique is preferred. However, time series data is generally non stationary so the variables are made stationary by applying unit root test on the basis of Augmented Dickey Fuller Test (ADF) Dickey and Fuller (1981). The variables are then made stationary at first difference or second difference. In the end, co integration technique is used to find long run relationship.

The Unit Root Test

Augmented Dickey Fuller (ADF) test is estimated in three different forms.

Pure Random walk i.e.
$$\Delta Y_t = \delta Y_{t-1} + \mu_t$$

Random walk with drift
$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \mu_t$$

Random walk drift and stochastic trend
$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \mu_t$$

Here null hypothesis is that $$\delta = 0$$ with alternative hypothesis $$\delta < 0$$. If $$\delta$$ is rejected then $$Y_t$$ is stationary. The difference between Dickey Fuller and Augmented Dickey Fuller is that in ADF the lagged values of dependent variables $$\Delta Y_t$$ is also added as independent variable just to make error terms pure white noise so that error term in the equation $$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha \sum_{i=1}^{m} \Delta Y_{t-i} + \epsilon_t$$ is serially un-correlated.

If the series are found non stationary then they are tested for stationarity by taking their first differences. If they are made stationary at first difference, it is called integrated of order first i.e. I (1) or in other words stationary.

Cointegration and Residual based Test

In Cointegration test, a unit root time series is regressed on another unit root time series in order to avoid the spurious regression making the resultant variables stationary. Hence the variables are cointegrated showing the long-term, or equilibrium, relationship between them. The variables under study have the following equation form:

$$GGDP_t = \beta_0 + \beta_1 Tour_t + \beta_2 CAD_t + ut$$

$$ut = GGDP_{t-1} - \beta_0 - \beta_1 Tour_{t-1} - \beta_2 CAD_{t-1}$$

If $$ut$$ is found stationary i.e. I(0) creating an interesting situation although $$GGDP_t$$, $$Tour_t$$ and $$CAD_t$$ are individually I(1), i.e. they have stochastic trends, their linear combination is I(0). So, their linear combination cancels out the stochastic trends in the series.

Error Correction Model

The ECM technique is used to find out error correction term in short run. Here the ECM equation for the model under study is as follows:

$$\Delta GGDP_t = a_0 + a_1 \Delta Tour_t + a_2 \Delta CAD_t + a_3 ut_{t-1} + \epsilon_t$$

where $$\Delta$$ denotes the first difference operator, $$\epsilon_t$$ is a random error term, and $$ut_{t-1} = (GGDP_{t-1} - \beta_0 - \beta_1 Tour_{t-1} - \beta_2 CAD_{t-1})$$ i.e. the one-period lagged value of the error. The above ECM equation depicts that $$\Delta GGDP$$ depends on $$\Delta Tour$$ and $$\Delta CAD$$ and also on the equilibrium error term. If the equilibrium error term is nonzero, the model is not in equilibrium.
**Granger Causality Test**

The Granger causality test exhibits the pair wise causal relationship between the variables under consideration. It may be unilateral or bilateral either way. So, this study also uses the test to find the causal relationship between GDP, CAD and Tourists separately.

**V. Estimation Results and Discussion**

Here, the results of our ADF tests presented in table.

**Stationarity Test for Variables**

**Table 2:** Unit Root Estimation (ADF Test)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Order of Integration</th>
<th>Test Equation Type</th>
<th>ADF Test Statistic</th>
<th>MacKinnon critical values</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGDP</td>
<td>1st Difference</td>
<td>Intercept</td>
<td>-4.1622</td>
<td>-2.9422</td>
<td>I(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trend and Intercept</td>
<td>-6.0636</td>
<td>-3.5514</td>
<td>I(1)</td>
</tr>
<tr>
<td>CAD</td>
<td>1st Difference</td>
<td>Intercept</td>
<td>-8.1622</td>
<td>-2.9422</td>
<td>I(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trend and Intercept</td>
<td>-8.2025</td>
<td>-3.5346</td>
<td>I(1)</td>
</tr>
<tr>
<td>Tourists</td>
<td>1st Difference</td>
<td>Intercept</td>
<td>-4.1148</td>
<td>-2.9446</td>
<td>I(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trend and Intercept</td>
<td>-4.1279</td>
<td>-3.5386</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

**Source:** Authors’ calculations based on Eviews3

In order to check the stationarity, this study analyses the order of integration of all variables by using unit root test based on ADF in table 2. The variables under study are checked for stationary with different types of equations (with intercept and trend) on the basis of ADF. All the variables are stationary at first difference and called stationary integrated of order first i.e. I (1). The ADF test statistics are found significant at 5% with comparison MacKinnon critical values. As all the variables are found stationary at first difference so it is now feasible to apply cointegration test to verify the long run relation between tourism and growth via the channel of current account deficit.

**Residual based Stationarity Test**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Order of Integration</th>
<th>Test Equation Type</th>
<th>ADF Test Statistic</th>
<th>MacKinnon critical values</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Term</td>
<td>Level</td>
<td>Intercept</td>
<td>-4.36</td>
<td>-2.95</td>
<td>I(0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trend and Intercept</td>
<td>-4.47</td>
<td>-3.55</td>
<td>I(0)</td>
</tr>
</tbody>
</table>

**Source:** Authors’ calculations based on Eviews3

The use of conventional regression technique requires that the residuals should be of I(0) if the variables included are of order I(1). A test of cointegration can be thought of as a pre-test to avoid spurious regression situations [Granger (1986)]. The above table confirms the condition of applicability of test of cointegration as residual of order I(0) and the variables are of order I(1). The ADF test statistics are greater than MacKinnon critical values at 5% significant level for both type of equation i.e. intercept and trend and intercept.

**Co Integration Test**

Co integration technique is used to solve the problem of spurious regression. If two variables are non-stationary, their linear combination cancels out the stochastic trend thus making the resultant variables
stationary. In this sense, it is said that two variables are co-integrated. In the analysis, when we apply co-integration technique, it is found that there is a long run relationship between tourism and growth. The table 2 shows the results as follows:

**Table 3:** Johansen Cointegration Results

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Eigen value</th>
<th>Likelihood Ratio</th>
<th>5 Percent Critical Value</th>
<th>1 Percent Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>r = 0</td>
<td>0.753383*</td>
<td>63.68489</td>
<td>29.68</td>
<td>35.65</td>
</tr>
<tr>
<td>r ≤ 1</td>
<td>0.321507*</td>
<td>16.08762</td>
<td>15.41</td>
<td>20.04</td>
</tr>
<tr>
<td>r ≤ 2</td>
<td>0.081748</td>
<td>2.899643</td>
<td>3.76</td>
<td>6.65</td>
</tr>
</tbody>
</table>

* denotes rejection of the hypothesis at 1% significance level.

**Table 4:** Long run Results

<table>
<thead>
<tr>
<th>Parameter Estimates</th>
<th>Cointegrating Coefficients</th>
<th>Standard Error</th>
<th>t-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD</td>
<td>-0.000512</td>
<td>0.00047</td>
<td>-10.8936</td>
</tr>
<tr>
<td>TOURISTS</td>
<td>0.000133</td>
<td>0.000018</td>
<td>7.3889</td>
</tr>
<tr>
<td>Constant</td>
<td>-13.31112</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Source:** Authors’ calculations based on Eviews 3

The table 4 shows the normalized cointegrating coefficients in second column. The signs of the variables corroborates to the theory in the literature. The Variable CAD is negatively related to the GDP growth and highly significant which validates the theory that when the current account deficit decreases, it results in GDP growth. The inclusion of the variable ‘tourists’ qualifies this assertion that whenever the number of tourists (the invisible part of current account i.e. services) increases, the current account deficit decreases accelerating the economic growth. The sign of variable ‘tourists’ is positive and extremely significant which is compatible with economic theory. So, the cointegration technique shows the long run relationships among the number of tourists, GDP growth rate and current account deficit.

**Error Correction Model**

The dynamics of cointegration technique are used to explore the long run equilibrium among the variables. However, obviously there may be disequilibrium among these variables in the short run. Thus, the error term in our model can be used as the equilibrium error. And this error term can be used to fix the short-run behaviour of Real GDP growth rate to its long-run value. Sargan (1984) was the first who used error correction mechanism (ECM) and later by Engle and Granger. The error correction mechanism (ECM) developed by Engle and Granger (1987) incorporate the short-run behavior of an economic variable with its long-run behavior. It is popularly known as Granger representation theorem\(^1\).

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1. Granger representation theorem describes that if two variables are cointegrated, the relationship between the two can be expressed as ECM.
Table 5: Error Correction Estimates

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t-ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(GDP(-1))</td>
<td>0.374987</td>
<td>0.23020</td>
<td>1.62896</td>
</tr>
<tr>
<td>D(GDP(-2))</td>
<td>-0.262921</td>
<td>0.24841</td>
<td>-1.05841</td>
</tr>
<tr>
<td>D(CAD(-1))</td>
<td>0.00000983</td>
<td>0.000017</td>
<td>0.58441</td>
</tr>
<tr>
<td>D(CAD(-2))</td>
<td>0.0000157</td>
<td>0.000013</td>
<td>0.11725</td>
</tr>
<tr>
<td>D(TOURISTS(-1))</td>
<td>-0.00000358</td>
<td>0.0000079</td>
<td>-0.45378</td>
</tr>
<tr>
<td>D(TOURISTS(-2))</td>
<td>-0.00000177</td>
<td>0.0000062</td>
<td>-0.28462</td>
</tr>
<tr>
<td>Constant</td>
<td>3.274176</td>
<td>1.18077</td>
<td>2.77292</td>
</tr>
<tr>
<td>Error term</td>
<td>-0.039928</td>
<td>0.03870</td>
<td>-1.03186</td>
</tr>
<tr>
<td>R^2</td>
<td>0.615630</td>
<td>F-Statistics</td>
<td>4.804983</td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td></td>
<td></td>
<td>0.487507</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on Eviews3

The results in the ECM table 5 show that the coefficient of error term for the estimated growth equation is negative but not statistically significant. However, the error term acts to correct any deviation from the long run equilibrium. As the theory implies that if error term is positive, the growth equation is above its equilibrium and the error term will reduce it to its equilibrium value in the next period whereas if negative, as it is expected to be in theory, the growth equation is below its equilibrium value and the error term will raise it to its equilibrium value in the next period. The speed of adjustment is approximately 4 percent annually.

Granger Causality Test

Engle and Granger (1987) and Granger (1988) established that if two time series variables are cointegrated then at least unidirectional causality is present. Here, the optimal lag of variables is selected with the smallest values of Akaike (1974) [AIC] and Schwartz (1978) [SBC] criteria. Both criteria indicated lag 2 as the optimal lag for the annual data. The results are reported in the table 4.

Table 6: Pair wise Granger Causality Estimation

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>F-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD does not Granger Cause GDP</td>
<td>0.36806</td>
<td>0.69516</td>
</tr>
<tr>
<td>GDP does not Granger Cause CAD</td>
<td>2.39909</td>
<td>0.10801</td>
</tr>
<tr>
<td>TOURISTS does not Granger Cause GDP</td>
<td>1.45996</td>
<td>0.24881</td>
</tr>
<tr>
<td>GDP does not Granger Cause TOURISTS</td>
<td>3.62841</td>
<td>0.03923</td>
</tr>
<tr>
<td>TOURISTS does not Granger Cause CAD</td>
<td>1.04680</td>
<td>0.36277</td>
</tr>
<tr>
<td>CAD does not Granger Cause TOURISTS</td>
<td>2.17530</td>
<td>0.11239</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on Eviews3

The table 6 illustrates the pair wise Granger Causality estimation. The first column shows the Null hypotheses for possible rejection at different significance level while second and third columns indicate F statistic and probability respectively. Based on the probability values reported in table 4, the hypothesis that GDP does not Granger cause current account deficit cannot be rejected but the hypothesis that current account deficit does not Granger Cause GDP can be rejected. Therefore, it depicts unidirectional Granger causality from CAD to GDP exhibiting that CAD has an impact on GDP so by decreasing CAD through tourism can enhance the economic growth. Similarly, the hypothesis that GDP does not Granger cause Tourists cannot be rejected but the hypothesis that Tourists does not Granger cause GDP can be rejected. Therefore, it appears that Granger causality runs one way from Tourists to GDP but not the other way. It means that Tourists has a strong impact on GDP so by increasing number of tourists in Pakistan, economic growth can be accelerated. The results of the table also express that the hypothesis that CAD does not Granger Cause Tourists cannot be rejected but the hypothesis that Tourists does not Granger Cause CAD can be rejected. So, there is
unidirectional Granger causality from Tourists to CAD but not the other way. In nutshell, Granger Causality points out that there is unidirectional causality from CAD to GDP, Tourists to GDP and Tourists to CAD.

VI. Conclusion and Policy Implications

The main thrust of this study is to explore the link among tourism, economic growth and current account deficit in Pakistan. The Johansen cointegration technique and ECM has been applied to analyze short run and long run relationship among the variables using the data from 1969 to 2007. The findings of this study confirms the hypothesis maintained earlier that tourism has a positive impact on the economic activity and hence the GDP growth of Pakistan. The study also validates the stable long run relationship among the number of tourists, GDP growth rate and current account deficit. It means that if tourists activities increase, the GDP growth rate improves via reduction in the current account deficit. Moreover, the short run results obtained by ECM demonstrate that the vector of error correction for the estimated growth equation is negative with the speed of adjustment is approximately 4 percent annually.

In order to support the logic of casual relationship between the variables, a Granger Causality test has been applied to check the pair wise Granger Causality. The findings of this test further strengthen the results of Johansen cointegration technique and show that there is unidirectional causality from CAD to GDP, Tourists to GDP and Tourists to CAD.

The significant relationship found in this study between number of the tourists and GDP growth rate provides the rationale of government role for providing and generating the tourism facilities in Pakistan. As the exports of Pakistan are highly volatile whereas the demand for imports being less elastic causing persistent current account deficit so the best way out of this dilemma is to give a due importance to the service side i.e. Tourism. Fortunately, Pakistan has several unique opportunities for different types of tourism. Its geographical location has made it a historical and cultural hub for the tourism. Pakistan has great potential in coastal tourism, mountain climbing and layout tourism adventures trip and tremendous opportunities in the areas of echo and safari tourism. So, the following suggestions are put forward for the growth of tourism industry in Pakistan.

i. Government should concentrate on the means of transportation, communication and power for the promotion of tourism industry in Pakistan.

ii. To attract the foreign travelers, the security issues should be handled in a best way.

iii. Tax structure plays a vital role in industrialization process. The government should give tax incentives to the air fares, hotels and other tourism related industries.

iv. The cultural and traditional festivals should be organized to create attractions for tourists.

v. The Journals, Brushers with maps and proper guidance should be placed in all the important hotels and tourists gateways so that the tourist from any country can benefit from it without any language barrier.

vi. The electronic and print media can also play an important role in enhancing the demand for tourism in Pakistan.
References


